

CLAIMS

1. Austenitic alloy which can be hot and cold-formed for use in aqueous, oxidizing media containing chloride, consisting of the following alloy elements (in % by mass):

Cr 18.0-21.0
 Fe 12.0-16.0
 Mo 9.0-13.0
 Co max. 1.0
 W 0.5-2.5
 C max. 0.025
 N 0.05-0.25
 Mn max. 0.50
 Si max. 0.50
 Ti max. 0.02
 Nb 0.05-0.5
 Cu max. 0.3
 P max. 0.010
 Al 0.05-0.5
 S max. 0.005
 Mg 0.005-0.030
 Ca 0.001-0.01
 V max. 0.5
 B max. 0.005
 Zr 0.001-0.030

Nb and Ta as needed, with the total of Nb and Ta being at most 0.30.

The residue consists of nickel and includes impurities resulting from production.

2. Alloy as in claim 1, characterized by the following alloy elements (% by mass)

Cr 19.0-20.0
 Fe 13.0-15.0
 Mo 10.0-12.0
 Co max. 1.0
 W 1.0-2.0
 C max. 0.020
 N 0.05-0.15
 Mn max. 0.50
 Si max. 0.50
 Ti max. 0.02
 Nb 0.1-0.3
 Cu max. 0.3
 P max. 0.010
 Al 0.10-0.35
 S max. 0.005
 Mg 0.006-0.020
 Ca 0.001-0.005
 V max. 0.30
 B max. 0.002
 Zr 0.005-0.025

The residue consists of nickel and includes impurities resulting from production.

3. Alloy as in claim 1 or 2, characterized in that the maximum total (in % by mass) of Al + Ti is 0.30.

4. Alloy as in one of the claims 1 to 3, characterized in that the same scrap materials are used to produce the claimed alloy combination

5. Alloy as in one of the claims 1 to 4, characterized in that in particular three scrap materials with different mixture ratios are combined with each other.
6. Alloy as in one of the claims 1 to 5, characterized in that an effective total $WS = \% Cr + 3[\% Mo + 0.5 \% W] + 16 \% N \geq 54$ is selected.
7. Alloy as in one of the claims 1 to 6, characterized in that a stretch limit $R_{p0,2}$ of at least 400 N/mm^2 is selected in the solution-annealed state.
8. Alloy as in claims 1 to 7, characterized in that a combination of $WS \geq 54$ with $R_{p0,2} \geq 400 \text{ N/mm}^2$ is selected in the solution-annealed state.
9. Utilization of the alloy as in one of the claims 1 to 8 as a welding additive material in the offshore industry, in particular for connection welding of longitudinal-seam pipes made of 6-Mo steel, duplex and super-duplex steel.
10. Utilization of the alloy as in one of the claims 1 to 8 as additive welding material for build-up welding, in particular for flanges in the offshore field, or for boiler pipes in waste burning plants.
11. Utilization of the alloy as in one of the claims 1 to 8 as a build-up welding band in plant construction.
12. Utilization of the alloy as in one of the claims 1 to 8 in gas channels of flue gas desulphurization installations.